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| 10/058,656 | 01/30/2002 | Yoshihisa Tsukada | 0649-0821P-SP | 3874 |

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| EXAMINER |
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CHEA, THORL

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| ART UNIT | PAPER NUMBER |
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1752

DATE MAILED: 02/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/058,656

Applicant(s)

TSUKADA ET AL.

Examiner

Thorl Chea

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3 and 5-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3 and 5-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 3, 5-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claiming of “a step of desalting an additive containing a halogen ion by electrolysis using an ion exchange membrane to form a desalted step and step of emulsion polymerizing one or more monomers to form the polymer latex with halogen content of not more than 500 ppm, wherein the polymer latex is not subjected to purification using an ion exchange resin or dialysis membrane” in claim 1 and in claim 19 as part of a method for preparing a heat developable material raises the issue of new matter since the specification as originally filed fails to disclose the step of forming polymer latex binder as part of the process for forming a heat developable material. See the process for synthesis of polymer latex on pages 29-32 and the process for forming the heat-developable material on pages 163- 171; pages 183-184 wherein the process for forming an image forming layer is not include “a step for forming a polymer latex binder” as part of the process for forming a “photothermographic material”. The specification also fails to provide support fails to provide support for “desalted additive contains a halogen content of not more than 500 ppm” presented in claims 20-21; and “said emulsion layer being

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image forming layer". The term "emulsion layer" disclosed in the specification is "light-sensitive layer, emulsion layer". It does not state that the emulsion layer is "an image forming layer".

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 3, 5-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The scope of protection sought for the "emulsion layer" presented in claim 1, 19 is unclear since it is not consistent with the specification disclosure. The specification disclosure discloses the "light-sensitive layer, emulsion layer". See page 163, under "Preparation of coating solution for image forming layer" which discloses image forming layer is a light-sensitive, emulsion layer containing light-sensitive silver halide, non-photosensitive organic silver salt, toning agent reducing agent and polymer latex. The antecedent basis for the "emulsion" in the step of forming the emulsion into layer on a side of the support" in claim 1 and 19 is unclear as to what emulsion is referred to.

5. Claims 1, 3, 5-21 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: The processes as claimed is incomplete in absence of providing on a support an image forming layer containing photosensitive silver halide, a non-photosensitive organic silver salt, a reducing agent and binder such as polymer latex. The "step of forming the emulsion into a layer on a support" in the last step appears to be the step of

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using the “emulsion polymerizing” which is limit to the coating of polymer latex emulsion to the support which fails to produce the heat-developable material.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 3, 5-6, 18-21 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over EP0911691 (EP'691).

EP'691 discloses a process for forming a photothermographic material containing polymer latex which has been treated with a separation fractional polymer or has an ionic conductivity of up to 2,5 mS/cm. Note to the material on page 29 , claims 1-12. Since the polymer latex has been treated before the use thereof in the heat developable material, the material that would affect the property of the photothermographic material would be reduced. Note for instance on page 3 last paragraph, it is disclosed that “a polymer latex is treated with a separation functional polymer as

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by ultrafiltration is usually carried out plural time”, and “is reduced ionic conductivity”. The step of coating the forming emulsion layer on a support is disclosed on page 28, [0143]., and the step subjecting the polymer latex to purification using the ion-exchange resin and separation membrane is disclosed on page 3, [0015]; and the polymer latex obtained by polymerization of more than one monomers is shown on page 4, [0024] to [0027].

EP'691 discloses the process for forming a polymer latex that is not subjected to purification through a desalting step and the process of coating to the emulsion layer on the support as claimed, but may not disclose the amount of halogen content of not more than 500 ppm present in the claimed invention. However, the polymer taught in the EP'691 is not subjected to purification through a desalting step similar to that of the claimed invention. According, the amount of halogen would be inherent to purification process taught in EP'691. In the absence of showing otherwise, it is asserted that it asserted that the polymer latex taught in the EP'691 is more purified and the ionic group such as halogen ion would be reduced to very small amount included the halogen ion presented in the claimed invention, and the invention as claimed would be either anticipated or found obvious over EP'691 in the absence of showing otherwise.

9. Claims 7-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP0911691 (EP'691) as applied to claims 1-6 above, and further in view of Kato (US Patent No. 6,174,663), Harring et al (US Patent No. 5,637, 449) and EP0803764 (EP'764).

Kato discloses a compound having a phosphoryl group in its molecule and the amine derivative as high contrast accelerator (abstract, and column 11, lines 17-20); Harring in column 16, lines 51-68, and columns 17-18 disclosed hydrogen donor as contrast enhancing compound; Milton in column 2 discloses a phosphoryl compound as antifoggant for silver halide material; EP'764 on

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page 12 a phenolic reducing agent of formula (I) of claim 9, including the compound having a phosphoryl group its molecule as reducing agent. It would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use a known reducing agent and the high contrast enhancer taught in Kao, Harring, Milton and EP'764 in the material of EP'691 with an expectation of achieving a material producing low fog, stable during storage and high image contrast.

10. Claims 1, 3, 5-21 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over EP 1096310 (EP'310).

EP'310 discloses a process for forming a photothermographic material as claimed. See the photothermographic material in the abstract, the compound (IV) on page 4, reducing agent on pages 6-11; the polymer latex on page 38, [0099] to [0108], page 39, lines 1-58, page 40, [0113] to [0116], and process for coating the imaging layer on a support on page 46, [0311]. The EP'310 may not disclose the polymer latex that is subjected to purification through desalting step presented in the claimed invention. However, this step is related to the steps of producing of polymer latex that is performed separately from the process of forming the photothermographic material, and fails to differentiate the claimed process taught in EP'310. In the absence of showing as how the process of forming the polymer latex affect the process for forming the claimed photothermographic material, it is asserted that the process as claimed is either anticipated or found prima facie obvious over EP'310. The halogen ion presented in the claims is considered as impurity which is inherent to the polymer latex, and there is no utility in the material.

Response to Arguments

11. Applicant's arguments filed November 23, 2005 have been fully considered but they are not persuasive for the reason set forth in the rejections set forth in the paragraph above. The applicants argue that the specification on page 131, lines 15-18 which reads as follow: The specific polymer latex described above may be used in any layer described above and is preferably added to a layer containing the organic silver salt and the silver halide (image forming layer), and there is clear support in the specification for use of the polymer latex binder in the image forming layer. The Applicants argue that the references relied on by the Examiner such as EP'691 fails to teach or fairly suggest a polymer latex having a low halogen content which has not been purified with an ion exchange resin and does not disclose teach an alternative means for purification as equivalent to these method. It is clear from the specification disclosure that desalting of the polymer latex using ion exchange resin or dialysis membrane results in a aggregation of the polymer latex due to dramatic changes in salt strength at the time of purification or concentration, and as results, the coating results is adversely affected (page 26, first paragraph). In EP'691, the commercial latex (LACTAR 3307B) is subjected to purification using a dialysis membrane or ion exchange membrane. Accordingly, there is a reduction in ion conductivity and halogen ion conductivity resulting in improved image preservability; however, there is a negative effect on the coating property. This adverse effect is not seen in the inventive process which does not purify the polymer latex with an ion exchange resin or a dialysis membrane. In the inventive process, the polymer latex is aided in having reduced halogen ion content by using a desalted additive such as a polymerization emulsifer. Thus, the inventive process allows for reduced halogen ion content, and still maintains the ion conductivity.

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Therefore, the inventive process enables improvement in both the image preservability and the coating properties, in addition to the density in the white background portion of the image being inhibited. Applicants note that this reference is only available as of its publication date of May 2, 2001, which falls after the filing date of the instant priority document 2001-022421 filed in Japan on January 30, 2001. Accordingly, enclosed herewith is a verified English translation of the instant priority document JP 2001-022421.

The argument with respect to the rejection under first and second paragraph is not persuasive. The issue under 35 USC 112 first paragraph raised in the previous office action is the specification as originally filed fails to provide support of the steps of forming polymer latex such as desalting an additive and the step of emulsion polymerization in the presence of the desalted additive to form a polymer latex with a halogen content of not more than 500 ppm as the step of "preparing heat-developing material". See the preparation of "heat-developable image recording material" in the specification as originally filed on page 204 which contains no step of desalting the additive or the step of using desalted additive to form a polymer latex. The processes photothermographic material and the polymer latex disclosed in the specification as originally filed are prepared separately. The polymer latex is prepared before the preparation of the heat-developable material. Therefore, the claiming the process of forming the heat-development material in concurrence with the process of forming polymer latex raises the issue of new matter.

It is agreed that the prior art of record such as EP'691 does not disclose "a step of desalting an additive containing a halogen ion by electrodialysis using an ion exchange membrane to form a desalted additive. a step of emulsion polymerizing one or more monomers in the presence of the

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desalted additive to form the polymer latex with a halogen ion content of not more than 500 ppm, wherein the polymer latex is not subjected to purification using an ion exchange resin or a dialysis membrane” presented in the argument, but the polymer latex is treated with a separation functional polymer as by ultrafiltration is usually carried out plural time to reduce ionic conductivity such as using available ion exchange resin and separation membrane. However, the processing steps in the argument is related to the process for forming a polymer latex while the claimed invention is directed to the process for preparing a heat-developable material. The steps of producing polymer latex are considered as an intermediate steps for producing a polymer latex for the production of a heat-developable material. The process of forming the polymer latex presented in the claimed and that presented in the EP’691 produce similar polymer latex with low ionic conductivity including the halogen ion. The applicants are referred to the references cited of interest Sakai et al (US 6,172,158) which disclosed a method of dialyzing a latex to reduce the chlorine ion to less than 500 ppm. Therefore, the worker of ordinary skill in the art would have use the method taught in EP’691 to use an available method of purification of the polymer latex known in the art including the exchange resin and separation membrane to produce provide a polymer latex to use in the production of heat-developable.

The argument with respect to the improvement of results shown on page 26 is not persuasive since it is based on the applicants’ assertion. There is no convincing evidence showing as how the coating property would be adversely affected the coating process. The results shown on Tables presented in the specification has been considered, but fails to overcome the rejection set forth above. The results appears to be related to the amount of halogen ions rather than the from the type of process used. See for instance Table 1 on page 174 wherein the comparative samples

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101-103 contains halogen ions from 550-1000 ppm vs. the 105-121 contains halogen ions from 8 ppm to 430 ppm. Therefore, it is not possible to compare the process claimed in the present claimed invention and that taught in the applied prior art. Moreover, the claims are rejection under 35 USC 102/103 and the applicants fails to differentiate the process claimed in the present invention and that taught in the applied prior art of record. The applied prior art discloses same process of using the polymer emulsion in the image forming layer of a heat-developable material. Moreover, the Examiner's position that the halogen ions presented in the claimed invention is considered as impurity containing in the binder taught in the applied prior art of record, and considered as undesired product that worker of ordinary skill in the would seek to eliminate. The worker of ordinary skill in the art would have expected that the lower the amount of impurity the better the product or the process. Product which differs from the prior art only its purity is obvious when the pure product possesses unexpected properties not possessed by the impure one. Ex parte Steelmand 140 USPQ 189; Ex parte Gray 10 USPQ 2d 1922, 1925 (BPAI 1989).

The verified English translation of the priority document JP2001-022421 fails to provide support for the invention as now being claimed which the steps of producing the polymer latex “a step of desalting an additive containing a halogen ion by electrodialysis using an ion exchange membrane to form a desalted additive. a step of emulsion polymerizing one or more monomers in the presence of the desalted additive to form the polymer latex with a halogen ion content of not more than 500 ppm, wherein the polymer latex is not subjected to purification using an ion exchange resin or a dialysis membrane”.

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Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sakai et al (US 6,172,158) cited of interest disclosed a process of producing vinylene chloride-based latex having chlorine ion content below 500 ppm based on the total concentration of all solid matter in the latex by weight.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thorl Chea whose telephone number is (571) 272-1328. The examiner can normally be reached on 9 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571)272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tchea *tu*
01-26-2006



Thorl Chea
Primary Examiner
Art Unit 1752